

## GEOGRAPHICAL RACES OF THE RODENT AKODON JELSKII THOMAS

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In the high Andes of Peru, Bolivia, and Argentina is a group of medium-sized rodents characterized by having the nose, face, ears, feet, and tail, or a combination of them, some shade of red or reddish brown. They also share other external and cranial characters and have been grouped under the subgenus *Chroeomys* Thomas. Nine races have been described as belonging to four different species. Effort to identify a series of one of these supposed species, *pulcherrimus*, led to an examination of other members of the subgenus and the conclusion that all should be considered races of the first species *jelskii*. Oldfield Thomas of the British Museum (Natural History) is the only mammalogist who has worked on the group previously.

Three expeditions of Chicago Natural History Museum to Peru since 1939 have collected large series of some races of this subgenus. Through the generosity of Dr. G. H. H. Tate of the American Museum of Natural History, a series from Bolivia has been available for study. Topotypes of *pyrrhotis* have been lent by Miss Barbara Lawrence of the Museum of Comparative Zoology, and topotypes of *inornatus* by Dr. Remington Kellogg of the United States National Museum. With these loans a total of 179 specimens has been brought together. They represent all but one race and include seven topotypes or near topotypes.

The earliest name listed under *Chroeomys* by Gyldenstolpe and by Ellerman is *Oxymycterus scalops* Gay 1847. This name, however, was placed by Tate in 1932 under *Notiomys* and placed in the synonymy of *Notiomys megalonyx megalonyx* Waterhouse by Osgood in 1943. The next earliest name is *Akodon jelskii* Thomas 1894, identified by him in 1884 as *Hesperomys (Habrothrix) scalops* Gay. At the same time *A. j. pyrrhotis* was described.

In 1897, *pulcherrimus* was described, and three subspecies were named in 1901. The following year, Thomas described *bacchante*

from Bolivia and a subspecies of it from Argentina in 1913. The last race, *inornatus*, from Peru was described in 1917. In 1926, Thomas cast some doubt on the validity of the subspecies *pyrrhotis*, as he did not have comparable material of *jelskii* of the same age. Thomas often noted the general resemblance of some races to *pulcherrimus*, but never to *jelskii*.

The general color pattern of *Chroeomys* is the same throughout its range, with parts of the pattern, namely, the amount of reddish color on the face and the size of the white postauricular patches, being more or less developed.

In the north, around Lake Junín, is found *jelskii*, a sober-colored race with partly reddish ears, metacarpals, and tail, and face suffused with the same reddish color. In some specimens, there is a trace of a postauricular patch. A little to the south, at Marainiyoc, and ranging to Huancavelica is *pyrrhotis*, like *jelskii* but with face, ears, feet, and tail much more intensely colored, the top of the tail darkened, and no postauricular patches. North of Cuzco *inornatus* occurs, a race very like *jelskii* but with less reddish suffusion on the face, the ears and feet duller, the black line on top of the tail stronger, and the postauricular patches slightly more developed. Like *jelskii* and *pyrrhotis*, *inornatus* has gray under parts. On the east side of the Andes, east of and between Cuzco and Lake Titicaca, in a wet and cloudy region, is a very dark race, *inambarii*, in which the reddish color is confined to the sides of the muzzle and the metacarpals. The ears and top of the tail are black and the under parts are gray, but the postauricular patch is more developed than in the preceding races.

Just north of Lake Titicaca and from its border some distance westward are the more strikingly colored races, *cruceri* and *pulcherrimus*. In these, the white postauricular patches reach their greatest development, often being connected with the under parts, which are white and not gray. The ears and top of the tail are almost black, the feet are gray or with just a trace of reddish, and this color on the face is confined to the sides of the muzzle.

On the Peruvian-Bolivian border and in Bolivia is a new race, hereinafter described as *ochrotis*, in which the peak of the color pattern as seen in *cruceri* and *pulcherrimus* is receding to the *jelskii* pattern. In *ochrotis*, the ears, feet, tail, and nose are reddish, and this color is beginning to appear around the eye. It is a very dark race, with white under parts.

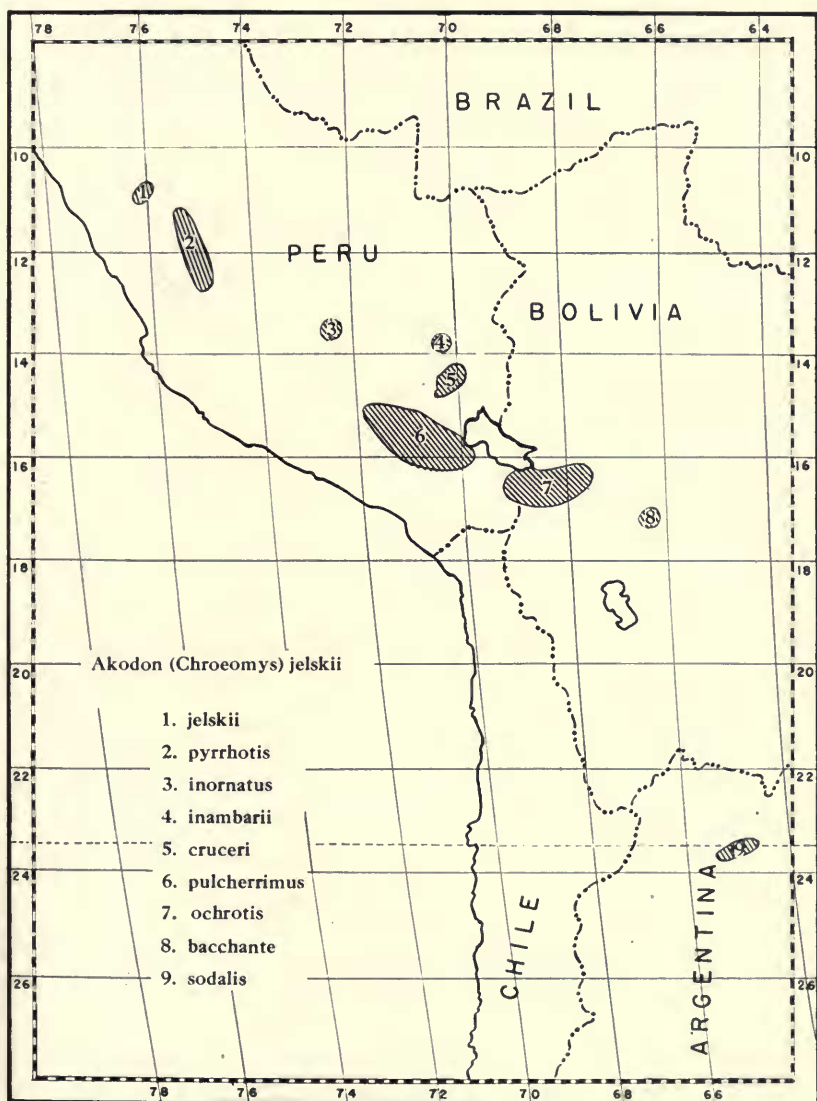


FIG. 21. Known distribution of *Akodon (Chroeomys) jelskii*.

From the Cochabamba region, Thomas described *bacchante* from one specimen and so far the only specimen known. In it is again found the typical *jelskii* pattern—reddish nose, face, ears, feet and tail, but white under parts. A lighter race, *sodalis*, from northern Argentina, described as a subspecies of *bacchante*, being similar to it but paler, is represented in this series by one specimen, but it serves to clarify Thomas' description of *bacchante*.

The change, which graduates from a comparatively plain race in the north to a strikingly colored one farther south and then recedes to the northern pattern, but does not reach it in plainness, is well shown by this series. Further material from intervening areas should strengthen this picture.

The skull of *jelskii*, from the northern point of the range, compared with *sodalis*, from the southern point, shows no major differences.

#### KEY TO RACES OF *Akodon* (*Chroeomys*) *jelskii* THOMAS

- (a) Face to around eyes suffused with ochraceous or reddish.
  - 1. Ears brown or with white hairs, postauricular spot small, under parts light gray..... *jelskii jelskii*
  - 2. Ears, feet, tail reddish brown (tail sometimes black above), postauricular spot obsolete, under parts gray or brown..... *jelskii pyrrhotis*
  - 3. Ears, feet, and tail fulvous, well-defined postauricular spot, under parts white..... *jelskii bacchante*
  - 4. Same as *bacchante* but paler throughout..... *jelskii sodalis*
  - 5. Ears very dark reddish brown, feet light brown, toes sometimes white, tail bicolor, under parts light gray..... *jelskii inornatus*
- (b) A few reddish hairs around eye and on face; ears, feet, tail, and sides of muzzle reddish brown; under parts white; well-defined postauricular patch.  
*jelskii ochrotis* subsp. nov.
- (c) No ochraceous or reddish around eyes or face; ears black, sides of muzzle reddish.
  - 1. Tail black above, fulvous or light below, general color dark brown; under parts white, large postauricular patch..... *jelskii pulcherrimus*
  - 2. Same as *pulcherrimus* but lighter throughout..... *jelskii cruceri*
  - 3. General color very dark, feet reddish, postauricular patch small.  
*jelskii inambarii*

#### Subgenus *Chroeomys* Thomas

*Characters*.—Size medium, total length about 200 mm., usually less, tail shorter than head and body. Fur long and soft. Ears large, 15–19 mm. long. Thumb with a nail. Fifth hind toe, without the claw, extends to near the middle of first phalanx of fourth toe. Claws elongated. Nose, face, ears, feet, and tail often tinged or

strongly colored with red or rufous. White postauricular spot usually indicated, sometimes very large.

Skull medium, greatest length 27–30 mm. Supraorbital edges rounded. Large, rounded brain case. Zygomatic plate narrow, front edge almost straight or sloping backward. Bullae large. Palatine foramina extending to beyond anterior edge of first molar. Incisors white or pale orange-yellow. Mammae: 2–2=8.

*Type species.*—*Chroeomys pulcherrimus* Thomas=*Akodon* (*Chroeomys*) *jelskii pulcherrimus* Thomas.

*Range.*—High altitudes, 10,000–15,000 feet, in the Andes from central Peru (Junín) southward through Bolivia to northern Argentina (Jujuy).

### **Akodon (*Chroeomys*) *jelskii jelskii* Thomas**

*Hesperomys* (*Habrothrix*) *scalops* Thomas, Proc. Zool. Soc. Lond., 1884, p. 455, pl. 43, fig. 1 (animal), pl. 44, figs. 1, 15, 16 (skull), 1884 (part).

*Acodon jelskii* Thomas, Ann. Mag. Nat. Hist., (6), 14, p. 360, 1894—region of Lake Junín, Department of Junín, central Peru.

*C[hroeomys] jelskii* Thomas, Ann. Mag. Nat. Hist., (8), 18, p. 340, 1916; *ibid.*, (9), 17, p. 317, 1926—Hacienda Atocsaico, Junín; Yana Mayo, Rio Tarma.

*Specimens examined.*—PERU: Junín: Carhuamayo, 3 males, 2 females. See remarks under next race.

*Measurements.*—Total length 175–196; tail 58–72; hind foot 25–26. Skull: greatest length 27.3–29; condylo-basal length 25.4–27; palatal length 12.5–13.6; interorbital width 4.5–4.8; zygomatic width 14–14.9; mastoid width 12.4–13.1; width of brain case 12–12.8; upper tooththrow 3.6–3.9; width across molars 5.4–6; length of nasals 9.8–10.6.

### **Akodon (*Chroeomys*) *jelskii pyrrhotis* Thomas**

*Hesperomys* (*Habrothrix*) *scalops* Thomas, Proc. Zool. Soc. Lond., 1884, p. 455, 1884 (part).

*Acodon jelskii pyrrhotis* Thomas, Ann. Mag. Nat. Hist., (6), 14, p. 360, 1894—Marainiyoc, central Peru.

*Chroeomys jelskii pyrrhotis* Thomas, Ann. Mag. Nat. Hist., (9), 17, pp. 317–318, 1926—Oroya (12,000 ft.) and Yana Mayo, Rio Tarma (8,500 ft.); Gyldenstolpe, Kungl. Svenska Vet. Akad. Handl., (3), 11, No. 3, p. 123, 1932.

*Specimens examined.*—PERU: Junín: Marainiyoc, 5 males, 9 females (M.C.Z.). Huancavelica: Huancavelica, 1 male. Total 15.



These two series of topotypes adequately show the differences pointed out by Thomas in the original descriptions. The subspecies *jelskii* has partly brown ears, light feet and tail, and gray under parts, while in *pyrrhotis* the ears, feet, and tail are richly colored reddish brown, the tail with sometimes a black line on the upper side, and the coloring of the face a richer red. The under parts are gray, as in *jelskii*, or a shade of dark brown. It may be that a larger series of *jelskii* will show that some individuals have brown under parts. Another difference between these two series is that the upper incisors in *jelskii* are almost white, or just tinged with pale yellow, while in *pyrrhotis* they are yellow or orange. Thomas recorded both races from Yana Mayo, Rio Tarma, Junín. These could be intergrades on the northern edge of the range of *pyrrhotis*, whose center of distribution is farther south. The specimen from Huancavelica represents the only other locality for *pyrrhotis*.

*Measurements*.—Total length 169–192; tail 68–82; hind foot 21–24; ear 18–21. Skull (5 adults): greatest length 27.4–29.2; condylo-basal length 25.3–27.1; palatal length 13.1–14.2; interorbital width 4.2–4.8; zygomatic width 14.3–15.6; mastoid width 12.7–13.7; width of brain case 12–12.8; upper toothrow 3.9–4.2; width across molars 5.8–6.3; length of nasals 9.8–10.9.

### **Akodon (Chroeomys) jelskii inornatus Thomas**

*Chroeomys inornatus* Thomas, Smiths. Misc. Coll., 68, No. 4, p. 2, 1917; Proc. U. S. Nat. Mus., 58, p. 238, 1920—Ollantaytambo.

*Chraeomys* [sic] *inornatus* Gyldenstolpe, Kungl. Svenska Vet. Akad. Handl., 11, No. 3, p. 122, 1932.

*Akodon (Chroeomys) inornatus* Ellerman, Fam. Gen. Rodents, 2, p. 415, 1941.

*Specimens examined*.—PERU: Cuzco: Ollantaytambo, 5 males (1 alc.), (U.S.N.M.).

This race is a connecting link between the northern and central races. It has the brown ears, reddish brown suffusion on the face, and gray under parts of the *jelskii* pattern, and the paler feet, stronger black line on top of the tail, reddish brown spots on the sides of the muzzle, and postauricular patches of the *pulcherrimus* pattern, but much smaller. The skull is like *jelskii* and *pulcherrimus*, but the bullae are slightly smaller.

*Measurements* (3 sub-adult males).—Total length 171–191; tail 76–81; hind foot 26–27; ear 15–17. Skull: greatest length 27.7–28.9; condylo-basal length 24.8–26.1; palatal length 12.4–13.2; interorbital width 4.7–4.8; zygomatic width 13.7–14.6; mastoid

width 12.9–13.3; width of brain case 12.9–13.1; upper tooththrow 3.9–4.1; width across molars 5.9–6.3; length of nasals 10.6–11.2.

### **Akodon (Chroeomys) jelskii inambarii** Thomas

*Akodon pulcherrimus inambarii* Thomas, Ann. Mag. Nat. Hist., (7), 7, p. 185, 1901—Limbani, Department of Puno, Peru.

*Specimens examined*.—PERU: Puno: Limbani, 4 males, 6 females. Total 10.

This is a well-characterized dark race from the eastern slope of the Andes in a wet, cloudy area. In color it is almost black. The postauricular patch is very small, nearly hidden by the ears, the under parts are gray instead of white, the tail is black above and gray below, and the feet are reddish. The muzzle retains the red spot on each side.

*Measurements*.—Total length 172–198; tail 69–82; hind foot 26–27. Skull (4 adults): greatest length 26.9–29.3; condylo-basal length 25–27; palatal length 4.4–4.6; zygomatic width 13.6–14.5; mastoid width 12.7–13.1; width of brain case 12.1–12.6; upper tooththrow 3.6–4.2; width across molars 5.6–5.7; length of nasals 10–11.6.

### **Akodon (Chroeomys) jelskii pulcherrimus** Thomas

*Akodon pulcherrimus* Thomas, Ann. Mag. Nat. Hist., (6), 20, p. 549, 1897—Puno, Peru.

*Chroeomys pulcherrimus* Thomas, Ann. Mag. Nat. Hist., (8), 18, p. 340, 1916.

*Akodon (Chroeomys) pulcherrimus pulcherrimus* Ellerman, Fam. Gen. Rodents, 2, p. 415, 1941.

*Akodon pulcherrimus cayllomae* Thomas, Ann. Mag. Nat. Hist., (7), 7, p. 185, 1901—Caylloma, Department of Arequipa, Peru.

*Specimens examined*.—PERU: Puno: Hacienda Collacachi, 10 males, 10 females; San Antonio de Esquilache, 1 male; Santa Lucia, 1 male. Arequipa: Sumbay, 1 female; Cailloma, 17 males (1 alc.), (2 U.S.N.M.), 13 females; San Ignacio (near Cailloma), 4 males (3 M.C.Z., 1 U.S.N.M.), 4 females (M.C.Z.); Sibayo, 1 male, 1 no sex (M.C.Z.). Total 63.

This race ranges from the border of Lake Titicaca west to the center of the Department of Arequipa.

In *pulcherrimus* the general color of the upper parts is near Mummy Brown.

The character given to separate *cayllomae* from *pulcherrimus*, "sides darkening instead of lightening as they approach the white

of the belly," does not hold when a large series is examined. The white postauricular patch is sometimes continuous with the white of the under side and sometimes separated by a band of the body color.

*Measurements.*—Total length 170–192; tail 73–83; hind foot 24–25; ear 18–19. Skull (4 adults): greatest length 28–28.3; condylo-basal length 26–26.4; palatal length 13–13.4; interorbital width 4.6–5.2; zygomatic width 14.3–14.5; mastoid width 12.6–13.6; width of brain case 12.2–13.2; upper tooththrow 4–4.2; width across molars 5.8–6.1; length of nasals 10.5–11.5.

### **Akodon (Chroeomys) jelskii cruceri** Thomas

*Akodon pulcherrimus cruceri* Thomas, Ann. Mag. Nat. Hist., (7), 7, p. 186, 1901—Crucero, Department of Puno, Peru.

*Specimens examined.*—PERU: Puno: Puerto Arturo, near Crucero, 1 male, 2 females; Hacienda Picotani, 3 males, 6 females; Hacienda Posoconi, 3 males, 4 females. Total 19.

Thomas stated that in this race the postauricular patch was small and surpassed by the ears. The size of this patch is variable, quite small in four individuals of this series, but in others fully as large as in *pulcherrimus* and, as in that race, sometimes extending to the white of the under parts. Its generally lighter dorsal color, near Dresden Brown, distinguishes this race from *pulcherrimus*. *A. cruceri* occupies the region north of Lake Titicaca.

*Measurements.*—Total length 170–203; tail 70–90; hind foot 25–27. Skull (5 adults): greatest length 27–28.8; condylo-basal length 24.9–26.6; palatal length 12.4–13.5; interorbital width 4.7–5; zygomatic width 13.2–14.6; mastoid width 12.4–13.2; width of brain case 11.9–12.6; upper tooththrow 4–4.3; width across molars 5.7–6.2; length of nasals 10.1–11.6.

### **Akodon (Chroeomys) jelskii ochrotis** subsp. nov.

*Type* from Huacullani, Department of Puno, Peru. No. 52521 Chicago Natural History Museum. Adult male. Collected August 25, 1941, by Colin C. Sanborn. Original number 2734.

*Diagnosis.*—Very close to description of *bacchante* but body color darker, ears, hands, feet, tail not "bright fulvous," and color of muzzle not surrounding the eyes.

*Color.*—General color above almost black. Center of back strongly mixed with reddish brown tipped hairs, darker on sides.



Sides of muzzle near Vinaceous-Rufous, ears, feet, and tail lighter. Under parts white. Postauricular patches about twice the size of the ears, and separated from white of under parts. Front feet tinged with rufous, toes white.

*Skull*.—Does not differ perceptibly from that of *pulcherrimus*.

*Measurements of type* (four from Pongo, Bolivia, in parentheses).

—Total length 188 (191–202); tail 78 (82–87); hind foot 26 (25–27). Skull: greatest length 28.5 (28.9–29.9); condylo-basal length 26.2 (26.6–27.6); palatal length 13.1 (12.9–13.9); interorbital width 4.7 (4.5–5); zygomatic width 14.4 (14.5–14.8); mastoid width 13 (12.8–13.1); width of brain case 12.9 (12.6–12.7); upper toothrow 4.2 (3.9–4.5); width across molars 6.1 (6.1–6.4); length of nasals 11.3 (11.1–12.4).

*Specimens examined*.—Total 61. PERU: Puno: Huacullani, 1 male (type); Yunguyo, 1 male, 2 females. BOLIVIA: Esperanza, 1 male (C.N.H.M.); Pongo, 24 males, 24 females; Alaska Mine, 4 males, 3 females; El Cumbre, 1 male (A.M.N.H.).

*Remarks*.—No specimens of *bacchante* have been available for comparison with this series. The description of *bacchante* states that “on the head the fulvous covers the whole of the nose and surrounds the eye.” The exact meaning of this is seen in a specimen of *sodalis* described as “similar to *bacchante* in all essential characters.” In *ochrotis* the bright color is confined to the sides of the muzzle with a few rufous hairs around the eye but not fully surrounding it. The majority of specimens are much darker than the color given for *bacchante*. It is believed that *ochrotis* represents a transitional pattern between that of *pulcherrimus* and that of *bacchante*.

The three specimens from Yunguyo and some from Pongo are Olive Brown above and agree in color with *cruceri* as described by Thomas for *bacchante*. The majority, however, are much darker. Three from Pongo are melanistic, being Wood Brown above, with black under parts, feet, and tail. They have retained the rufous nose, ears, and front feet, and a dull white postauricular patch.

### Akodon (Chroeomys) jelskii bacchante Thomas

*Akodon bacchante* Thomas, Ann. Mag. Nat. Hist., (7), 9, p. 138, 1902—Choro (3,500 meters), on the high paramos north and northwest of Cochabamba, Bolivia.

*Chroeomys bacchante* Thomas, Ann. Mag. Nat. Hist., (8), 18, p. 340, 1916.

*Akodon (Chroeomys) bacchante bacchante* Ellerman, Fam. Gen. Rodents, 2, p. 415, 1941.

Thomas recorded but one specimen that appears to be unique. It was described as like *cruceri* but with the "muzzle, ears, metacarpals, hind feet and upper side of tail bright fulvous," and with the fulvous of the muzzle extending over the nose and surrounding the eyes.

**Akodon (Chroeomys) jelskii sodalis** Thomas

*Akodon bacchante sodalis* Thomas, Ann. Mag. Nat. Hist., (8), 11, p. 141, 1913—Cerro de la Lagunita, east of Maimara, Province of Jujuy, Argentina.

*Chraeomys bacchante sodalis* Gyldenstolpe, Kungl. Svenska Vet. Akad. Handl., 11, No. 3, p. 123, 1932.

*Akodon (Chroeomys) bacchante sodalis* Ellerman, Fam. Gen. Rodents, 2, p. 415, 1941.

*Specimens examined*.—ARGENTINA: Jujuy: Sierra de Zenta, 1 male.

This is the southernmost known representative of the subgenus, and the race palest in color. The nose, ears, feet, and tail are light fulvous and this color extends around the eyes. There is a very small postauricular patch, almost hidden by the ears. In general, the color pattern is the same as in the northernmost pale *jelskii*.

*Measurements*.—Total length 191; tail 86; hind foot 24; ear 19. Skull: greatest length 28.3; condylo-basal length 26; palatal length 13.3; interorbital width 4.7; zygomatic width 13.9; mastoid width 12.9; width of brain case 12.7; upper toothrow 4; width across molars 6.1; length of nasals 11.7.